

Mortar Lining -

An Environmental Success Story



- Protects groundwater
- Minimizes waste
- Promotes recycling
- Conserves natural resources
- Rehabilitates pipes in place
- Saves energy
- Increases system performance
- Improves water quality
- Enhances fire protection
- Innovative solution
- Saves money

DOE P2 Televideo Conference, May 18-20, 2004

Saves money



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Mortar Lining -

An Environmental Success Story

PRESENTERS:

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**FH Infrastructure
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Mortar Lining Process

- Excavate & cut out access points
in pipeline



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Mortar Lining Process

- Excavate & cut out access points in pipeline
- Video existing pipeline to assess line condition

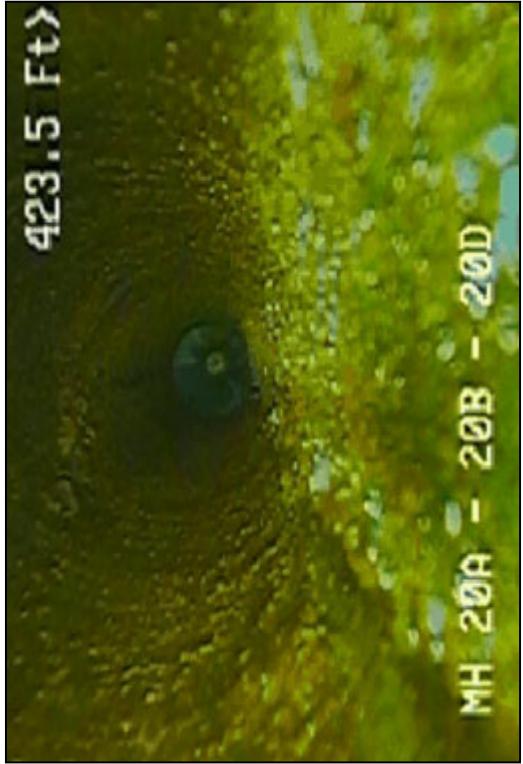


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Mortar Lining Process

- Excavate & cut out access points in pipeline
- Video existing pipeline to assess line condition
- Remove solids buildup in pipeline with:
 - High-pressure water jets,



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Mortar Lining Process

- Excavate & cut out access points in pipeline
- Video existing pipeline to assess line condition
- Remove solids buildup in pipeline with:
 - High-pressure water jets,
 - Mechanical scrapers,



Mortar Lining Process

- Excavate & cut out access points in pipeline
- Video existing pipeline to assess line condition
- Remove solids buildup in pipeline with:
 - High-pressure water jets,
 - Mechanical scappers,
 - Squeegees.



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Mortar Lining Process

- Excavate & cut out access points in pipeline
- Video existing pipeline to assess line condition
- Remove solids buildup in pipeline with:
 - High-pressure water jets,
 - Mechanical scappers,
 - Squeegees.
- Video inspect cleaned pipeline to assess pre-mortar lining condition



Mortar Lining Process, continued

- Install mortar lining with rotary applicator & drag trowel assembly

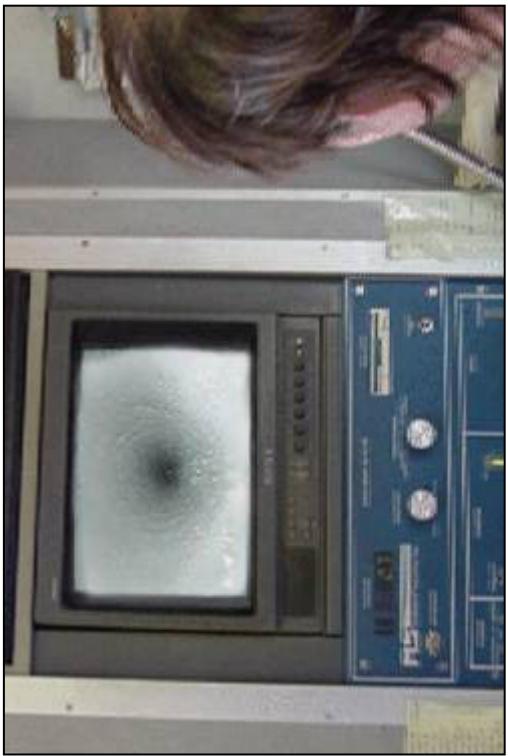


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Mortar Lining Process, Continued

- Install mortar lining with rotary applicator & drag trowel assembly
- **Video inspect finished mortar lining pipe section to verify quality of lining**



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Mortar Lining Process, Continued

- Install mortar lining with rotary applicator & drag trowel assembly
- Video inspect finished mortar lining pipe section to verify quality of lining
- **Install pipeline spools at access points and backfill excavations**



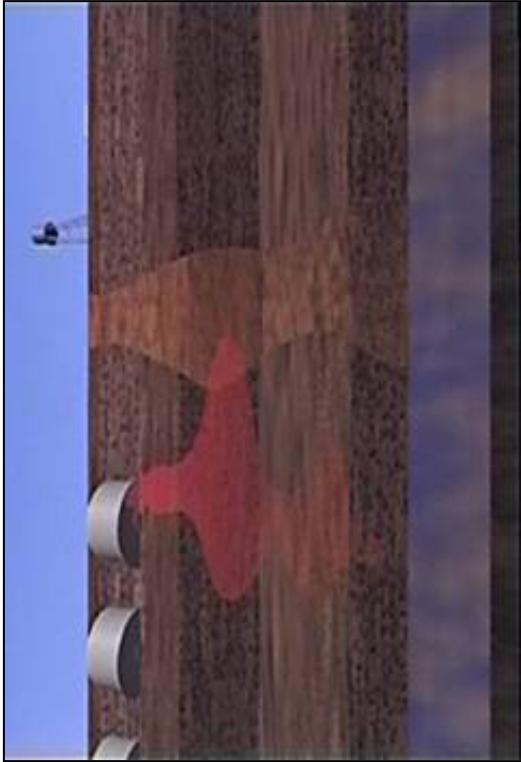
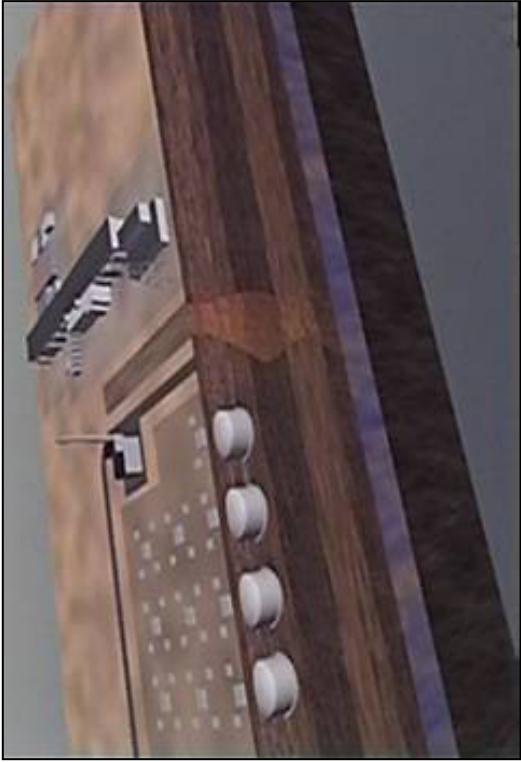
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Pollution Prevention & Environmental Benefits of Mortar Lining

Environmental Benefits

- Protects groundwater by eliminating driving force

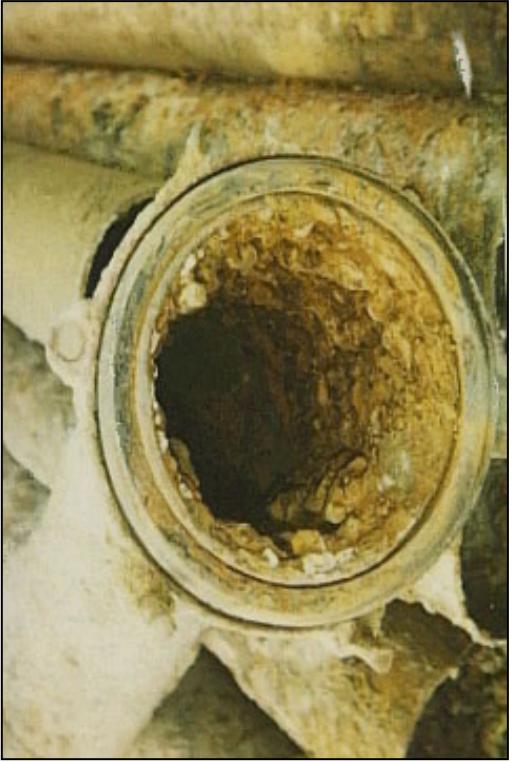


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Pollution Prevention & Environmental Benefits of Mortar Lining

- Protects groundwater by eliminating driving force
- **Minimizes waste by rehabilitating pipes in place**



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Pollution Prevention & Environmental Benefits of Mortar Lining

- Protects groundwater by eliminating driving force
- Minimizes waste by rehabilitating pipes in place
- **Conserves natural resources**



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Pollution Prevention & Environmental Benefits of Mortar Lining

- Protects groundwater by eliminating driving force
- Minimizes waste by rehabilitating pipes in place
- Conserves natural resources
- Promotes recycling

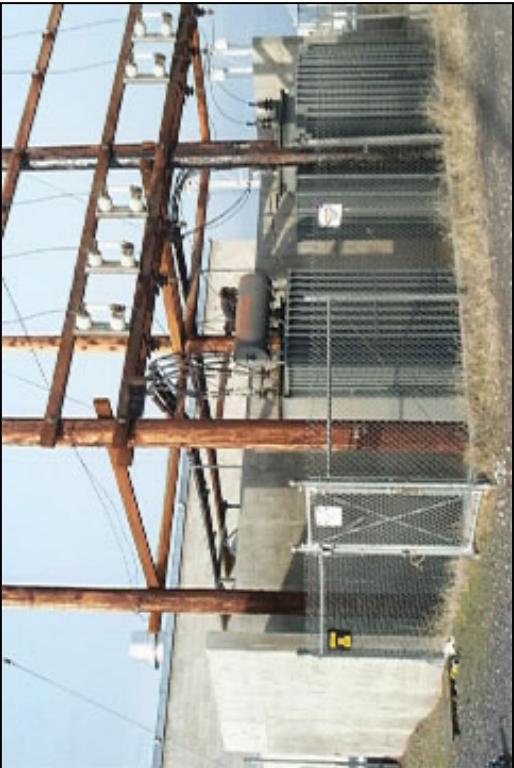


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Pollution Prevention & Environmental Benefits of Mortar Lining

- Protects groundwater by eliminating driving force
- Minimizes waste by rehabilitating pipes in place
- Conserves natural resources & promotes recycling
- Promotes recycling
- **Saves energy by reducing pumping costs**



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Pollution Prevention & Environmental Benefits of Mortar Lining

- Protects groundwater by eliminating driving force
- Minimizes waste by rehabilitating pipes in place
- Conserves natural resources & promotes recycling
- Promotes recycling
- Saves energy by reducing pumping costs
- Improves water quality & enhances fire protection



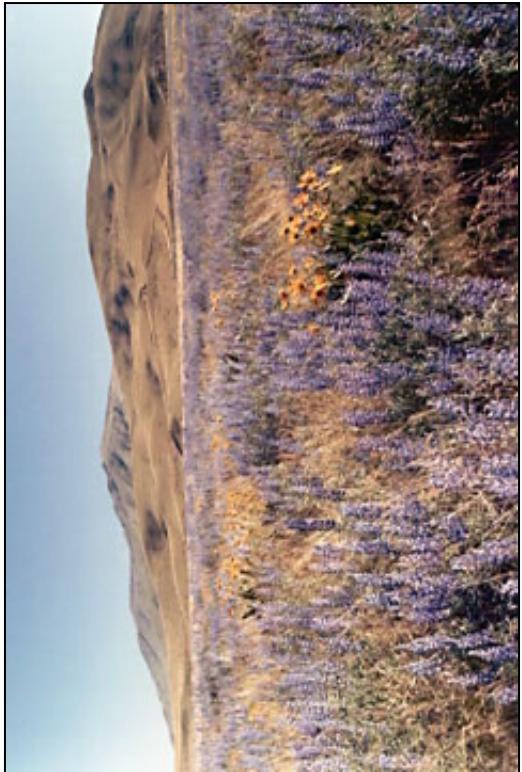
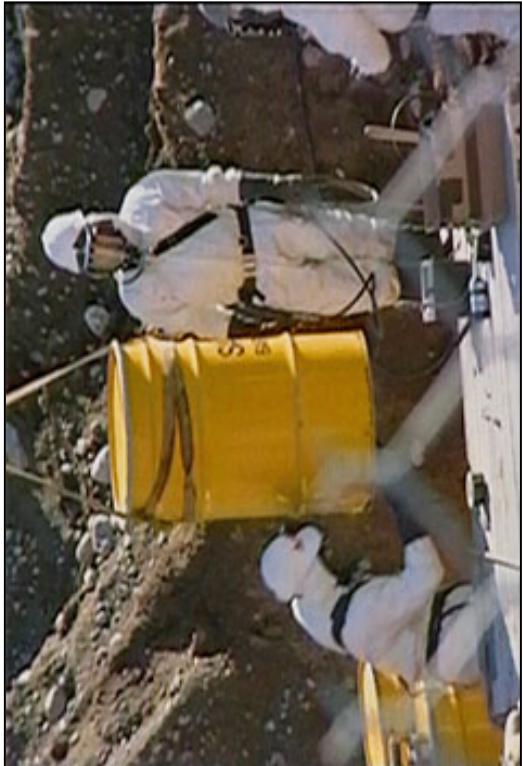
Before



After

Pollution Prevention & Environmental Benefits of Mortar Lining

- Protects groundwater by eliminating driving force
- Minimizes waste by rehabilitating pipes in place
- Conserves natural resources & promotes recycling
- Promotes recycling
- Saves energy by reducing pumping costs
- Improves water quality & enhances fire protection
- **Saves money for other environmental cleanup**



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Thanks to the people who contributed to the production of this presentation:

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Questions & Answers



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